



Posttraumatic Stress Among Mortuary Workers: Prevalence, Risk, and Resilience

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Posttraumatic Stress among Mortuary Workers: Prevalence, Risk, and Resilience

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Abstract

In this study, I investigated the prevalence of Posttraumatic Stress Disorder (PTSD) symptoms among mortuary workers and the role of related risk and protective factors by exploring (i) rates of provisional PTSD diagnosis among a sample (n = 333), (ii) relationships between 11 predictor variables and PCL-5 Total PTSD Scores (PTSD symptom severity), and (iii) ability of predictor variables to predict variance in PTSD symptom severity. Given the risk of trauma exposure in the mortuary service field, I aimed to assess mental risk and resilience among those working in the industry. The study implemented a self-report survey via the Qualtrics platform to collect information about participants' trauma experience and stress symptom expression, as well as demographic information and their experience with: body handling, coping mechanisms, social stigma, identification with the deceased, and ability to find meaning or purpose in their work. I found that gender, location, years of experience, coping, stigma, identification, and purpose had significant correlations with Total PTSD Scores with location, active coping, avoidant coping, and stigma functioning as the best predictors of Total PTSD Scores. Female participants tended to yield higher PTSD scores than males, and those who practiced their work in urban locations tended to yield higher PTSD scores than those in non-urban locations. Active, passive, avoidant, and masking coping, along with stigma and identification correlated positively to Total PTSD Scores while years of experience and purpose were correlated inversely to Total PTSD Scores. These findings open an important dialogue on the factors that contribute to PTSD symptoms among

mortuary workers. It is the primary hope of the researcher that by revealing the problem and identifying related contributing factors, future research can hone in on the most significant predictor variables to develop specialized mental health resources for a struggling population.

Dedication

I dedicate this thesis to my family. I am infinitely thankful to my dad for his for round-the-clock research and writing support. I would also like to thank my mom, Liz, and Dougie for their relentless encouragement.

Acknowledgments

I would like to offer heartfelt gratitude to my thesis advisor Dr. Richard McNally and to my research advisor Dr. Dante Spetter for their invaluable guidance. I would also like to thank Caleb Wilde for his important insights into the mortuary industry and his tremendous efforts to connect me with the community.

Table of Contents

Dedication	v
Acknowledgments.....	vi
List of Tables	ix
Chapter I. Introduction.....	1
Occupational Risk of Posttraumatic Disorder.....	2
Occupational Risk of Secondary Traumatic Stress.....	3
Mortuary Workers and PTSD	5
Additional Potential Risk Factors for PTSD among Mortuary Workers	7
Stigma	7
Identification with the Deceased.....	8
Protective Factors and Resilience	9
Mental Health Resources, Professional Stigma, and Help-Seeking	10
Study Aims and Hypotheses	11
Significance of Study.....	13
Chapter II. Method.....	14
Participants.....	14
Measures	15
Clinical Measures.....	15
Supplemental Questionnaire	16
Procedure	18

Data Collection	18
Study Protocol.....	19
Data Cleaning.....	20
Data Analysis	20
Chapter III. Results	24
Prevalence of Posttraumatic Strength	24
Brief COPE Inventory.....	25
Total PTSD Scores and Predictors: Correlation Matrix	27
Total PTSD Scores and Predictors: Regression Analysis.....	30
Analysis of Work Trauma Subgroup	31
Correlation Matrix of Work Trauma Subgroup	32
Multiple Regression Analysis on Work Trauma Subgroup	35
Exploratory Research.....	37
Chapter IV. Discussion	38
General Discussion	43
General Discussion	43
References.....	46

List of Tables

Table 1: General Demographic Analysis	24
Table 2: Demographic Analysis on PTSD Scores and Provisional Diagnosis	25
Table 3: Principal Component Analysis on Brief COPE.....	26
Table 4: Descriptive Statistics of Variables.....	28
Table 5: Correlation Matrix: Predictor Variables and PTSD Scores.....	29
Table 6: Multiple Regression Analysis Model Summaries for Best Predictors of PTSD Scores	30
Table 7: Multiple Regression Analysis Coefficient Statistics for Best Predictors of PTSD Scores	31
Table 8: “Work Trauma” Subgroup: Descriptive Statistics of Variables	33
Table 9: “Work Trauma” Subgroup: Correlation Matrix: Predictor Variables and PTSD Scores	34
Table 10: “Work Trauma” Subgroup: Multiple Regression Analysis Model Summaries for Best Predictors of PTSD Scores	35
Table 11: “Work Trauma” Subgroup: Multiple Regression Analysis Coefficient Statistics for Best Predictors of PTSD Scores	36
Table 12: Exploratory Help-Seeking Research.....	37

Chapter I

Introduction

Posttraumatic Stress Disorder (PTSD) is associated with extremely disturbing and distressing symptoms for those that suffer (American Psychiatric Association, 2013). Fortunately, research, awareness, and education surrounding Posttraumatic Stress Disorder have grown tremendously since its addition to the Diagnostic and Statistical Manual of Mental Disorders III in 1980. While researchers have explored how the nature of the work of some occupational groups may leave them more vulnerable to the development of PTSD, there is very little current research on mortuary workers and PTSD, especially within the civilian population.

PTSD is as a disorder that may occur in people who have been exposed to trauma, such as natural disaster, serious accident, or sexual assault/rape either directly or indirectly. Those who suffer may continue to experience intense and distressing thoughts and feelings related to the trauma(s) long after the event has ended, such as but not limited to nightmares, flashbacks, sadness, and social anxieties (American Psychiatric Association, 2013). Consequently, PTSD is associated with increased risk of suicide (Terrier & Gregg, 2004).

There is emergent literature on occupational risks for PTSD, specifically among those who work in professions that are more likely than others to experience exposure to trauma. Some of the more commonly researched professions in this regard are the military, the police force, and emergency response groups. Given what the literature on

PTSD has determined about trauma exposure and its relationship with the development of PTSD symptoms, it is reasonable to hypothesize that there may be additional at-risk occupational populations, especially once we begin to consider trauma types that may be more indirect in nature. One such occupational population is those in mortuary work, given their duties of working with the deceased and the bereaved. Since there is limited research on prevalence and risk among this group, it is abundantly clear that research efforts are essential to better understand why and how PTSD might affect mortuary workers and therefore to learn how best to provide mental health resources if necessary.

Occupational Risk of Posttraumatic Disorder

Historically, rates of PTSD among the general population have been found to be as low as 1%, such as in a nationwide survey of psychiatric disorders (Helzer et al., 1987). This rate jumped to 4% in a more recent study that examined two archival data sets et al., 2016), and climbs to 5.6% among 1,824 randomly selected men and women given a questionnaire to assess PTSD (Frans et al., 2005). Lifetime prevalence of PTSD is cited to be as high as 8.3% in the general population according to Kilpatrick et al. (2013), who found that based on DSM-5 criteria, lifetime prevalence, past-12-month, and past 6-month PTSD prevalence was respectively 8.3%, 4.7%, and 3.8%.

However, rates of PTSD among certain professional populations tend to be higher than in the general population. The most common example of these at-risk groups are those who serve in the military. Prevalence may vary depending on which conflict is examined. For example, rates of PTSD have been found to be 4 – 17% among US Iraq War veterans (Richardson et al., 2010). Additionally, studies among police officers have

found the incidence of current duty-related PTSD to vary between 7% and 19% (Carlier et al., 1997; Gersons, 1989; Robinson et al., 1997).

These occupational groups have a greater risk of meeting the clinical criteria for trauma exposure (known as the DSM-5 PTSD “Criterion A”) because of the required duties of their job; therefore, they are at greater risk of developing PTSD. Criterion A defines exposure to actual or threatened death or serious injury. This can occur in one or more of the following ways: 1) directly experiencing the trauma, 2) witnessing the trauma as it occurs to someone else, 3) learning that the trauma (which must be violent or accidental) occurred to a family member or close friend, or 4) experiencing repeated or extreme exposure to aversive details of the trauma (excluding exposure by way of media, TV, or pictures, unless the exposure is work-related) (American Psychiatric Association, 2013). Given this definition of trauma exposure it becomes clear why those in the military, on the police force, or in other emergency response professions where there may be directly exposed to violence, death, and serious injury would likely experience higher rates of PTSD. The fourth criterion specifically gives reason for concern that mortuary workers may also be at risk of PTSD because as they handle and prepare bodies, they can be expected to be exposed to graphic details of trauma.

Occupational Risk of Secondary Traumatic Stress

Mortuary workers may be exposed to trauma directly through body handling and preparation; however, they may also face additional work stressors in their dealings with the bereaved. Through bereavement and counseling, mortuary workers may also be exposed to aversive details of trauma to the deceased or become fatigued by the

emotional weight of their counseling duties. This type of secondary trauma exposure could also contribute to PTSD, or perhaps what can be more accurately described as Secondary Traumatic Stress (STSD). However, it is generally agreed that STSD is a “syndrome of symptoms nearly identical to PTSD” (Figley, 1995) which suggests that STSD is just as disruptive and distressing. STSD can be used to refer to the observation that those who come into continued close contact with trauma survivors may experience considerable emotional disruption and may become indirect victims of the trauma themselves (Figley, 1995). STSD is also considered to be a normal result of a helping professionals to empathize (to understand and emotionally connect) with a trauma victim (Brady & Matthew, 2008). STSD symptoms, parallel to those of PTSD, are categorized into three clusters: intrusive re-experiencing of the traumatic material, avoidance of trauma triggers and emotions, and increased physical arousal (Bride et al., 2004). With regard to STSD, all of these symptoms are assumed to result from secondary (or indirect) exposure to trauma among human services providers but occur as they would with professionals who are at risk of primary exposure (Cieslak et al., 2014).

There is a fair amount of literature to suggest that STSD plagues several at-risk occupational groups and for a variety of reasons is specific to each profession. For example, social workers may be responsible for working with survivors of trauma such as childhood abuse, domestic violence, violent crime, disasters, and war and terrorism. A 2007 study in which 282 practicing social workers were given questionnaires to evaluate STSD found that 15.2% of those respondents reported STS symptoms that occurred in the preceding week, at a level that meets the diagnostic criteria for PTSD (Bride, 2007). Along the same lines, it researchers have found that psychotherapists who work with

trauma victims are at risk of secondary trauma, which can grievously impact therapists' personal and professional well-being (Hesse, 2002).

Given there is no clinical differentiation between the symptoms of PTSD and STSD, I have not differentiated PTSD from STSD among mortuary workers in this study. Further, I wish to acknowledge that the counseling and bereavement element of their work, though secondary in its exposure type, could reasonably contribute to PTSD symptoms.

Mortuary Workers and PTSD

Given that the work of a mortician or funeral director will involve body handling and preparation and/or interaction with the bereaved to varying degrees and in different proportions, there is reason to believe that these individuals may meet clinical criteria for trauma exposure. Mortuary workers may be exposed, and repeatedly so, to aversive details of trauma by way of decedents that have come to violent or unnatural and accidental deaths. These workers may also become exposed to details of trauma by way of their interaction with the bereaved kin of those who have died violently or accidentally. Unfortunately, while the above sections have established a reasonable concern for PTSD among mortuary workers, there is virtually no existing research on this group in the civilian population.

Military mortuary workers and civilian body handlers in disaster settings can develop PTSD. A longitudinal study examined 54 volunteer body handlers who aided in the wake of the USS Iowa gun turret explosion. The authors found higher rates of PTSD

symptoms in body handlers versus disaster workers who did not directly handle dead sailors Ursano, et al., 1995).

Additionally, a 2001 study explored the effects of traumatic death exposure among wartime mortuary workers. The goal was to determine whether intrusion and avoidance symptoms increased between pre- and post- exposure to traumatic death during the Persian Gulf War. Among 352 military men and women who worked in the mortuary, it was found that post-exposure intrusion symptoms increased significantly for all groups exposed to the dead and that post-exposure avoidance symptoms were present in the two groups with the greatest exposure to the dead (McCarroll et al., 2001). This serves as further evidence that exposure to traumatic death leads to higher rates of PTSD in mortuary workers.

A civilian mortuary worker may not be exposed to traumatic death with the same frequency and severity of a mortuary worker in a military or disaster setting; however, there is reason to believe that given extended time in the field mortuary workers may be similarly exposed to traumatic deaths over the course of their careers. Mortuary workers may see bodies that have come to unnatural ends such as (but not limited to) homicide, suicide, automotive accident, drowning, and fire. Such incidents can leave bodies in a state visibly telling of trauma and exposure to these bodies which would constitute exposure to aversive details to trauma.

While perhaps debatable with regard to whether it meets fulfillment of to the clinical criteria (DSM-5 Criterion A), interaction with the bereaved may be considered a form of exposure to trauma (albeit secondary in nature). As was established previously, helping-type professions where trauma-related counseling occurs can lead to PTSD. In

some cases, morticians and funeral directors may need to counsel and work extensively with the bereaved. In cases where the decedent has experienced a traumatic death, these mortuary workers may face repeated exposure to the aversive details of the death from the bereaved kin.

Additional Potential Risk Factors for PTSD among Mortuary Workers

To understand the severity and nature of the PTSD problem among mortuary workers, it is important to look beyond the exposure to trauma and into additional likely contributing risk factors. Preliminary research reveals that there are other factors, somewhat or entirely unique to mortuary work, that appear to be significant to understanding the scope of mortuary workers' risk of developing PTSD.

It is significant to note that demographics may also play a role in the development of PTSD among mortuary workers. While the importance of these factors with regard to mortuary workers is not completely understood at this time, the literature does suggest that demographic factors such as gender (Irish et al., 2011) can be a predictor of PTSD in other populations. Thus, this study aims to take a preliminary look at some demographics as they relate to PTSD symptoms among mortuary workers.

Stigma

A unique issue that may befall mortuary workers is social stigma. Historically, the stigma of working with the dead developed from the practice of assigning the work to those in lower social classes. While this may no longer be the case, stigma lingers into current day and "morticians and funeral directors are painfully aware of the common

negative stereotype of people in their occupations” (Thompson, 1991). In Thompson’s study, he conducted ethnographic interviews with 19 morticians and funeral directors in four states and found that mortuary workers are particularly stigmatized “not only because they perform work that few others would be willing to do, but also because they profit from death” (Thompson, 1991). Though there is no prevalent literature on the role between social stigma surrounding mortuary workers and a relationship with PTSD, it is important to investigate whether present-day mortuary workers believe that others view them negatively because of their occupation. Further, it will be important to explore whether holding that belief has a relationship with PTSD symptoms.

Identification with the Deceased

Identification with the deceased is a cognitive mechanism in which someone who works with the dead experiences feelings such as “It could have been me,” “It could have been my spouse,” or “It could have been my friend.” Ursano et al. (1999) found that disaster workers during the USS Iowa turret explosion report that identification with the dead and their families is particularly stressful. While the type of identification (e.g. identification as a spouse versus as a friend) was linked with varying severity of symptoms, the study concluded that “identification with the deceased is a risk factor for PTSD and posttraumatic symptoms in disaster workers exposed to the dead” (Ursano et al., 1999). The article points out that identification with the deceased is not unique to disaster workers. The article discusses two studies when bereaved victims of accidents were found to have experienced identification with the dead, such as the Coconut Grove fire in Boston (Lindemann, 1944) and the 1978 crash of a commercial airliner (Shuchter & Zisook, 1985). Specifically, it was reported that they manifested characteristics and

mannerisms of the deceased and imagined what their own last thoughts, feelings, and experiences would be in the same situation (Ursano et al., 1999). Given that the subjects in aforementioned studies and mortuary workers share trauma exposure risks by way of body handling or aversive details to trauma, it gives reason to postulate that mortuary workers may also experience identification with the dead, thus putting them at increased risk for developing PTSD symptoms.

Protective Factors and Resilience

While much of the literature has directed my research toward considerable concerns for an at-risk and understudied suffering population, it is important that I explore influential protective factors that might be contributing to resilience among mortuary workers. While there are many to consider, this study focuses on compassion satisfaction and coping skills. Compassion satisfaction is the concept that there can be benefits derived from working with traumatized or suffering persons, such as positive feelings surrounding the ability to help others, contributing to important work or furthering a community or society, and pride in being able to do the work well (Figley & Stamm, 2002). A 2009 study of 764 emergency workers found that compassion satisfaction was positively correlated with coping strategies, measured by Brief COPE Inventory (Cicognani et al., 2009). Relatedly, a study found counselors who practiced active coping by seeking emotional support, planning, seeking instrumental social support, and humor were found to experience “fewer unpleasant psychological symptoms, fewer PTSD symptoms, less vicarious trauma, less negative affect, and less burnout” (Sprang et al., 2007). Restricted by time and resources, this study can only begin to explore protective factors that play a role in PTSD symptoms. The intention of

this study is to take a preliminary look at how mortuary workers may in fact be resilient against PTSD symptoms or other negative effects of their work by way of compassion satisfaction (ability to find meaning in the work) and coping mechanisms.

Mental Health Resources, Professional Stigma, and Help-Seeking

Campaigns have become increasingly prevalent, like those created by the U.S. Department of Veterans Affairs, to increase awareness and outreach about PTSD in the military with goals of educating, de-stigmatizing, and providing information about and access to mental health resources. Both the development and increase in popularity of such campaigns gives light to the fact that many do not know where to turn if they are suffering from PTSD, or perhaps even how to recognize the symptoms. While the mental health community and society as a whole are making great strides in PTSD support, there is room to question whether they have neglected other struggling populations, such as mortuary workers.

Though a previous section discussed stigma, it is again relevant in the conversation about mental health resources and PTSD among mortuary workers. In addition to social stigma, there is likely also significant professional stigma involved in seeking mental health support for PTSD symptoms. There could be stigma involved with the admission of PTSD symptoms because of the perception that admission to symptoms is equivalent to admission of lacking competence or soundness of mind. The majority of research on the relationship between PTSD and stigma is within military populations; however, there is still valuable and pertinent evidence to support that there is problematic stigma surrounding help-seeking and PTSD. A 2000 study of United States peacekeepers

returning from Bosnia with aims of exploring psychological problems in the military found that “admitting to a psychological problem was more stigmatizing than admitting to a medical problem and over half believed their career would be affected if they disclosed a psychological problem” (Britt, 2000). If mortuary workers feel stigmatized in their PTSD symptoms, they may be losing opportunities to receive valuable treatment.

Both psychotherapy and psychopharmacology have been found to be effective in treating PTSD (Paunovic et al., 1998). If mortuary workers are suffering, the mental health community should devote resources to make the group aware of such available mental health resources and they should be encouraged to seek help. Even if PTSD symptoms are sub-clinical, there is no reason these people should suffer. While not an empirical goal of the study, I am interested in exploring awareness of and comfortability surrounding mental health resources in order to take a step toward understanding the psychological needs of mortuary workers.

Study Aims and Hypotheses

This study intends to uncover evidence of significant PTSD symptoms among mortuary workers. Chiefly, the study seeks to investigate risk and resilience factors correlated to Total PTSD Scores by concentrating on the following aims:

Aim 1

Given the potential occupational risk of trauma exposure, this study will investigate the relationship between mortuary work and PTSD. I anticipated finding evidence of considerable rates of PTSD symptoms among mortuary workers.

Aim 2

This study seeks to explore how trauma exposure may contribute to prevalence of PTSD. Specifically, I expected that a mortuary worker's time spent handling bodies would have a positive correlation with Total PTSD Scores.

Aim 3

This study examines risk factors and protective factors of PTSD. Demographics, stigma, and identification with the deceased have been identified as potential risk factors that could contribute to the development of symptoms. Specifically, I hypothesized that increased identification with the deceased, and increased feelings of stigmatization would correlate positively to PTSD symptoms.

In regards to resilience, this study will also investigate coping. I hypothesized that increased active coping skills would inversely correlate to Total PTSD Scores. The study looks at the role of compassion satisfaction (ability to find meaning in the work), and I expected that that the ability to find meaning in mortuary work would inversely correlate to Total PTSD Scores.

Aim 4

Lastly, this study aims to explore awareness of and comfortability surrounding access to mental health resources. While it is not my goal to look for a relationship between resource awareness and PTSD, it is an important piece of the research in order to open a dialogue about PTSD as a problem and mental health support as a solution in the community.

Significance of Study

As has been established thus far, this exploration of PTSD among mortuary workers is a necessary response to the lack of literature on a population that is by the nature of their daily work, likely to be exposed to PTSD qualifying trauma. I intend for this work to support related research that establishes occupational trauma as a significant problem among occupations where traumatic death exposure is more likely than in the general population. Current research shows conclusively that PTSD is a great detriment and a source of distress to those who suffer from it (APA, 2013). So that someday the mental health community can be motivated to employ aid, it is firstly essential to provide evidence that a considerable mental health problem exists. Beyond that, I aim to identify relationships between key risk and resilience factors for PTSD symptoms in this unique population to explore the scope of how PTSD might be developing among the group. This study uncovers relationships between PTSD and identified factors to open a door for more advanced research on the primary predictors of PTSD in the mortuary field. Further, I hope that this research may serve as a first step towards the creation of specialized and targeted outreach and treatment strategies for those who are suffering.

Chapter II

Method

This study was conducted using an online questionnaire format administered via the Harvard licensed Qualtrics platform. The target sample was 150 participants who identified as currently working in the mortuary industry as a funeral director, mortician, undertaker, etc. I recruited participants through professional networks based in the United States, from both state-level professional associations and private online professional networks on social media. As incentive, I informed potential participants that completion of the survey would earn optional raffle entry for a \$100 Amazon.com gift card. I informed potential participants that there would be three raffle winners of this prize drawn at random upon the study's completion.

Participants

A total of 333 participants (132 male and 201 female) completed the survey in its entirety and this group serves as the study sample. 745 potential participants completed the consent form, and 628 went on to begin the survey. 295 of those potential participants did not fully complete the survey and were excluded from the study. Participants who identified as under the age of 18 were excluded from the study. Additionally, potential participants who did not identify as currently employed as mortuary workers were excluded from the study.

Measures

This study survey implemented various measures to investigate possible links between the occupational experience of the mortuary worker and PTSD.

This study was interested in collecting data on gender and location of practice (rural, urban, or suburban). Ultimately, I coded both rural and suburban responses as “non-urban” in order to simplify the data. Only these two demographic measures were included to allow for improved confidentiality among participants while also allowing for a preliminary exploration of possible links between PTSD in mortuary workers and demographic characteristics.

Clinical Measures

The survey included three clinical measures. The primary measure for this study is the PTSD Checklist for DSM-5 with Life Events Checklist for DSM-5 and Criterion A (PCL-5) (Weathers et al. 2013). The PCL-5 is a three part self-report measure that serves to assess whether a subject meets criteria for provisional diagnosis of PTSD. Part 1 assesses whether trauma exposure has occurred, Part 2 provides the opportunity to elaborate on trauma exposure in a more open-ended manner, and Part 3 assesses symptom presence and severity. The authors state that responses may be scored to assess total symptom severity and/or symptom cluster severity. The authors also note that provisional PTSD diagnosis can be made by using scoring against DSM-5 criteria. For the purpose of this study, I calculated PCL-5 Total PTSD Score and determined prevalence of Provisional PTSD among the sample.

The second clinical measure I included in the survey is the DASS21 (Lovibond & Lovibond, 1995). This 21-item self-report measure is designed to measure the emotional

states of depression, anxiety and stress. While not a preliminary aim of my study, I included this measure as a precaution in the event that study finding disproved my hypothesis that mortuary workers face a significant PTSD problem, so that I might investigate distressing, yet perhaps subclinical symptoms. Ultimately, I did not use the data yielded from the DASS21 portion of the survey in any analysis because the PCL-5 measure yielded robust data.

The third clinical measure in this study is the Brief COPE Inventory (Carver et al., 1989). This measure is abbreviated from the COPE inventory and was implemented instead of the original, full COPE to decrease the burden on respondents participating in the survey. The Brief COPE includes 28 items, which measure 14 conceptually differentiable coping reactions. Using a Likert scale, participants reported their experience with different styles of coping. While Carver et al. do not endorse a formal method of calculating an overall coping score, this inventory can reveal important coping patterns that can be investigated with their regard to their relationships PTSD.

Supplemental Questionnaire

The supplemental questionnaire addressed additional single-item measures related to the study. Three questions about work experience were included: one asked the participants to identify their years of experience in the mortuary work arena. One question asks participants to identify their time spent with different mortuary duties by allotting percentages out of a total 100% between four identified duties: body handling/body preparations, funeral arrangements/event planning, counseling/bereavement, and administrative duties/paperwork. Body handling is the

factor with which the study is primarily concerned, and thus, was the only variable from the “duties” category that was included in analysis for this study. The questionnaire includes an item about how participants were introduced to the field: by family trade, independent interest, or other introduction not listed. For the purpose of remaining focused on pressing concerns revealed by the literature, data surrounding introduction to the field was not included in analysis for this study.

One single-item measure pertaining to social stigma was included: “To what degree do you feel you are perceived negatively because of your occupation?” by which participants were instructed to answer on an interval scale 1 to 5, where 1 means not at all and 5 means extremely. A second single measure item was included to help address identification with the deceased: “How frequently do you identify with the deceased meaning, how frequently do you have thoughts such as ‘that could have been me’, ‘that could have been my friend’, ‘that could have been my spouse’, etc.?”. Again, participants were instructed to answer on an interval scale 1 to 5, where 1 means not at all and 5 means extremely. A single-item measure was included to address compassion satisfaction: “To what degree are you able to find meaning, purpose, and satisfaction in the work that you do?” to be answered on the aforementioned interval scale. I implemented a single-item measure will be used in place of Figley’s original 1995 40-item Compassion Fatigue and Satisfaction Test (CSFT) in order to reduce the burden on participants while providing preliminary insights on the predictive role of ability to find meaning in the work on prevalence of PTSD symptoms.

Three exploratory questions were asked surrounding outlook and help-seeking with the goal of opening up further discussions on mental health support in the mortuary

work community. To be answered on the same interval scale as above, participants were asked “How comfortable would you be seeking mental health support (talking to a primary doctor, seeking therapy, seeking support groups) regarding stress symptoms as a result of your work?” and “How aware are you of mental health resources specific to the nature of your work?” Finally, an open-ended question was included to get a sense of general outlook, with an eye towards compassion satisfaction: “In what ways do you find meaning, purpose, or satisfaction in the work that you do? Feel free to provide an anecdote or general philosophy related to finding ‘greater meaning’ in your work.”

Procedure

This study was conducted based on three components: data collection, study protocol and data cleaning.

Data Collection

I collected data for this study from willing and consent-providing participants reached online through either state-level professional associations, funeral home websites, or private professional groups on social media. As a first step, I compiled a list of email contact information for state-level associations. I drafted an invitation to participate in the study, in which I explained the goals of the study, described the participation experience, and informed them about the raffle incentive. I asked for willingness from professional associations in each state to distribute my survey to their members. Several offered to place a notice for my study in their professional newsletters. Additionally, I contacted individual funeral homes across the country with email information publicly available on their websites. Lastly, a contact I made during my

preliminary research was able to use his standing in the mortuary community to bring attention to my study on social media within professional networks to which I did not have access, being from outside the industry.

Study Protocol

This study was based on a self-report survey that was administered online using the Harvard-licensed Qualtrics platform. I implemented one hyperlink across all online invitations to participate in the study. The link brought interested participants to the consent and screener portion of the study, to ensure that they were eligible to participate ahead of completing the study survey.

The survey introduction served as a screener to both collect consent as well as to establish eligibility of participants by confirming age and current profession. Once a participant reviewed consent information, signed consent to participate, and confirmed that they were a mortuary worker 18 years or older, they were automatically directed to a new survey component where they could begin the study survey. This redirect served to both protect confidentiality of participants by separating identifying consent information from their survey responses and to prevent participants from taking the study survey without first completing a screener and consent form.

In summary of the study survey, the introduction page included general information to the survey, a link to review consent information, and contact information for support resources in the event that taking the survey caused any distress. It was noted prominently that participation in the study could be stopped at any time. The first study questions were to assess demographic information (to a limited degree as to protect confidentiality of participants), three clinical measures (one to assess PTSD, one to assess

stress, anxiety and depression, and another to measure coping). Supplemental questions with single item measures aimed at assessing additional potential risk and protective factors for PTSD. Exploratory questions surrounding awareness and comfortability with help-seeking were included. Lastly, an open-ended question was included to give participants a voice with regard to their experience finding meaning in the work that they do.

Upon completion of the survey, participants were given the option to enter a raffle for a \$100 Amazon.com gift card. If they opted in, they were again redirected to a new survey component where they could enter their e-mail address as a raffle entry. Again, this redirect is to unlink identifying personal information from survey data, and to prevent unauthorized persons from entering the raffle.

The Qualtrics platform also provides data collection from which data was exported for preliminary examination in Excel, then to SPSS for statistical analysis.

Data Cleaning

Upon closure of the survey, some measures were taken to ensure the data exported for analysis was suitable for the study. First, this study included only those participants who completed the consent forms and qualified during screener component. Second, this study excluded participants who did not fully complete the survey. Partial survey responses were not considered eligible data for this study.

Data Analysis

I conducted data analysis to explore each of the following aims:

Aim 1

In order to establish whether there is evidence of considerable prevalence of PTSD among mortuary workers, I used basic descriptive analyses to determine what percentage of the sample met provisional diagnosis for PTSD. Additionally, demographic factors such as gender, location and years of experience were included at this stage to help describe the sample. I included demographic analysis of PCL-5 Total PTSD Scores to show gender and location differences among the sample.

Provisional PTSD diagnosis can be made, per the instructions of the authors, by treating each symptom item on the self-report rated as 2 = "Moderately" or higher as a symptom endorsed, then following the DSM-5 diagnostic rule which requires at least: 1 B item (questions 1-5), 1 C item (questions 6-7), 2 D items (questions 8-14), 2 E items (questions 15-20).

I calculated PCL-5 Total PTSD Score by summing the scores for each of the 20 symptom items in the measure (responses rated 0-5) per the instructions of the authors. The total symptom severity score range is 0-80 (Weathers et al. 2013).

Aim 2

With the purpose of investigating significant relationships between identified possible predictor variables and Total PTSD Scores, I created a zero-order correlation matrix. This aims to give a summarized view of Total PTSD Scores and their relationship with gender, location, years of experience, coping mechanisms, body handling, stigma, identification with the deceased, and ability to find meaning in the work.

Ahead of this correlation matrix, it was important to reduce the data collected from the Brief COPE inventory from 14 attributes to a more practical application of higher-order factors. I implemented a principal component factor analysis to identify four primary loading factors (active coping, passive coping, avoidant coping, and masking coping) to be used as predictor variables in the correlation matrix.

Aim 3

I used stepwise multiple regression analysis whereby the total score on the PCL-5 is the dependent variable and the predictive factors are the independent variables to determine which factors are best able to explain the variance in PTSD Score data, and thus, best able to predict Total PTSD Scores.

Aim 4

Since this study has an eye towards a population whose risk for PTSD is founded in the trauma exposure-prone nature of their occupation, this study supplements the aforementioned analysis with a further exploration of a subgroup of participants who were identified to have cited a work trauma as the worst trauma they have experienced. Because the survey instructions advise participants to proceed with worst trauma in mind, this group is presumed to have had a mortuary work trauma in mind while they completed the PCL-5 portion of the survey.

For this “Work Trauma” subgroup, I conducted nearly parallel analysis as I did for the entire sample. Firstly, I created a correlation matrix to provide a summary view of Total PTSD Scores’ relationship with the 11 identified predictor variables. Secondly, I conducted stepwise multiple regression analysis to investigate the ability of the variables (with significant correlations with Total PTSD Scores) to account for variance in this subgroup’s Total PTSD Scores.

Aim 5

Lastly, this study includes some descriptive data on the exploratory questions posed in the survey. I offer a summary view of responses by the total sample regarding awareness of resources and comfort seeking help.

Chapter III

Results

The final sample consisted of 333 participants, all invited to participate from within professional networks based in the United States. All were 18 years or older. The study consisted of 132 men and 201 women. They confirmed that their current profession is in mortuary work as a mortician, funeral director, embalmer, or undertaker. Further general demographic information appears in Table 1.

Table 1

General Demographic Analysis

Variables	Total	%
Gender		
Male	132	39.64%
Female	201	60.36%
Location		
Rural	87	26.13%
Suburban	157	47.15%
Urban	89	26.73%
Years of Experience Mean (SD)	15.6 (12.99)	

Prevalence of Posttraumatic Strength

Table 2 shows the prevalence of Post-Traumatic Stress symptoms within the sample. Using the PCL-5 (Weathers et al. 2013) self-report measure, I determined whether each participant, who reported exposure to a qualifying trauma, also met provisional criteria for PTSD according to DSM-5 (APA, 2013). Because the assessment

of PTSD was by participant self-report, not a formal clinical diagnosis, PTSD caseness can only be provisional. In the entire group, 28.5% ($n = 333$) met the criteria for PTSD. For this subgroup, women ($n = 201$) had a higher mean PCL-5 total symptom score than did men ($n = 132$) (25.3 versus 17.4; $t(331) = -4.46$, $p = .000$).

Table 2

Demographic Analysis on PTSD Scores and Provisional Diagnosis

Variables	PTSD Score			Provisional PTSD	
	Mean	SD	Max	#*	%**
Gender					
Male	17.39	14.91	67	25	29.55%
Female	25.32	17.69	74	70	27.86%
Location					
Rural	19.68	16.35	71	20	22.99%
Suburban	21.6	17.26	73	44	28.03%
Urban	25.64	17.09	74	31	34.83%

*Number out of total sample

**% of subgroup

Brief COPE Inventory

As recommended by Carver (1997), I first performed a principal component factor analysis to reduce the Brief COPE data prior to testing whether coping styles predicted PTSD scores. Upon analysis, one item out of fourteen (self distraction) was removed because it failed to preferentially load on any factor (i.e., all loadings were less than .5). This principal component analysis is shown in Table 3.

I used four factor labels that best capture of essence of the items loading on each factor. They were: Active Coping (5 items), Passive Coping (3 items), Avoidant Coping

(3 items), and Masking Coping (2 items). For further analysis, composite scores were created for each of these four factors, based on the mean of the items, which had their primary loadings on each factor.

Table 3

Factor loadings and communalities based on a principal component factor analysis with Varimax with Kaiser Normalization rotation for 14 items from the Brief Cope. (N =333)

Item	Active	Passive	Avoidant	Masking
Self Distraction	0.20	0.41	0.42	0.32
Active Coping	0.62	0.48	0.21	0.02
Denial	-0.01	0.09	0.71	-0.08
Substance Use	0.11	-0.09	0.37	0.54
Emotional Support	0.86	0.21	-0.06	0.11
Instrumental Support	0.89	0.14	-0.08	-0.04
Behavioral Disengagement	-0.12	0.01	0.80	0.17
Venting	0.57	0.13	0.38	0.33
Positive Reframing	0.34	0.74	0.03	0.14
Planning	0.59	0.49	0.25	0.04
Humor	0.05	0.28	0.03	0.79
Acceptance	0.16	0.76	0.01	0.31
Religion	0.16	0.65	0.04	-0.43
Self Blame	0.28	0.04	0.73	0.19

Total PTSD Scores and Predictors: Correlation Matrix

Correlations were computed among PCL-5 total PTSD scores and 11 predictor variables (descriptive statistics for all variables appear in Table 4) on data from all 333 participants. . Bivariate correlations between each pair of variables appear in Table 5. Ten correlations between the CL-5 total PTSD score and the predictor variables were statically significant ($p < .01$, two-tailed).

Gender correlated with PTSD scores at $r(332) = .23, p < .001$. Location of practice also has a significant relationship with PTSD scores at $r(332) = .31, p < .001$. For all correlation and multiple regression analyses, I combined rural and suburban participants to one location category (non-urban). Lastly, years of experience was inversely correlated with PTSD scores at $r(332) = -.22, p < .001$.

All four coping factors from the Brief COPE correlated significantly with PTSD Scores. The strongest relationship was between the Avoidant Coping factor and PTSD scores with $r(332) = .68, p < .001$, suggesting that avoidant style coping mechanisms (denial, behavioral disengagement, and self-blame) are more positively associated with higher PTSD scores than are other coping mechanisms.

Lastly, I investigated the relationship between PTSD scores and three single-item measures. Correlation analysis indicates significant findings in all three of these relationships. The correlation between “stigma” and PTSD score is significant, $r(332) = .31, p < .001$, suggesting that the belief that one is perceived negatively because of one’s mortuary occupation was associated with higher PTSD scores. The correlation between “identification” and PTSD scores is significant, $r(332) = .29, p < .001$, suggesting that the

practice of identifying personally with the deceased is associated with higher PTSD scores. Finally, the relationship between “purpose” and PTSD scores was significant, though inversely correlated, $r(332) = -.19, p < .001$. This suggests that the ability to find meaning and purpose in one’s work is associated with lower PTSD scores and mitigates against PTSD.

Table 4

Descriptive Statistics for all Variables except Gender and Location, which can be found in Table 1 (n=333)

	Mean	Std. Deviation
Total PTSD Score	22.18	17.07
Active coping *	2.01	0.69
Passive coping *	2.25	0.75
Avoidant coping *	1.50	0.53
Masking coping*	1.81	0.75
Years of Experience	15.60	12.99
Body Handling **	30.37	24.21
Stigma ***	2.32	1.10
Identification ***	2.84	1.10
Purpose ***	4.07	0.88

* Coping scores on a scale 1-4, with 4 being maximum implementation of coping style

** Time spent handling or preparing bodies as a percentage out of a total 100% of time at work.

*** Single-item measures scores on a scale 1-5, with 5 being “extremely” in response to the survey question.

Table 5

Summary of the bivariate correlations of overall PTSD scores and 11 predictor variables for all participants (n=333)

	1	2	3	4	5	6	7	8	9	10	11
PTSD											
Gender	.228**										
	0.00										
Active	.347**	.271**									
	0.00	0.00									
Passive	.167**	0.07	.573**								
	0.00	0.20	0.00								
Avoid.	.678**	.156**	.276**	.119*							
	0.00	0.00	0.00	0.03							
Mask.	.298**	0.01	.259**	.187**	.369**						
	0.00	0.93	0.00	0.00	0.00						
Years	-.224**	-.464**	-.286**	-0.02	-.182**	-.181**					
Exp	0.00	0.00	0.00	0.77	0.00	0.00					
Body	0.08	-0.01	-0.02	-0.07	0.04	0.05	-.175**				
Hand.	0.17	0.82	0.69	0.18	0.51	0.37	0.00				
Stigma	.312**	0.10	.134*	.123*	.267**	.229**	-.164**	0.05			
	0.00	0.08	0.01	0.03	0.00	0.00	0.00	0.33			
Identif-ication	.285**	.215**	.215**	.195**	.289**	.176**	-.183**	0.08	.268**		
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00		
Purp-ose	-.194**	-0.03	0.06	.127*	-.229**	-.125*	.172**	-0.04	-.255**	-0.10	
	0.00	0.54	0.27	0.02	0.00	0.02	0.00	0.41	0.00	0.07	
Loca-tion	.308**	.232**	.129*	.111*	.260**	.157**	-.258**	0.08	.139*	.205**	-.145**
	0.00	0.00	0.02	0.04	0.00	0.00	0.00	0.17	0.01	0.00	0.01

** . Pearson Correlation is significant at the 0.01 level (2-tailed).

* . Pearson Correlation is significant at the 0.05 level (2-tailed).

Total PTSD Scores and Predictors: Regression Analysis

Given that many of the predictor variables were intercorrelated, I used a stepwise multiple regression analysis to determine the set of predictors that best predicts variance in PTSD (i.e., PCL-5 total scores). Tables 6 and 7 summarize the descriptive statistics and results of the multiple linear regression. The results of the regression indicated that four predictors best explained variance in PTSD symptoms were Avoidant Coping, Active Coping, Location and Stigma, which accounted for 51% of the variance with an adjusted $R^2 = .511$, $F(4,328)=87.75$, $p < .001$ (Model 4 as seen in Table 6). It was found that Active Coping ($\beta = .157$, $p < .001$), Avoidant Coping ($\beta = .570$, $p < .001$), Location ($\beta = .123$, $p < .01$), and Stigma ($\beta = .122$, $p < .01$), were significant predictors of PTSD score.

Table 6

Model summaries of four variables as best predictors of PCL-5 Total PTSD Score (n=333)

Model	Std. Error of the Estimate	Change Statistics			df1	df2	Sig. F Change
		R Square Change	F Change				
1	12.57	0.46	281.51	1	331	0.000	
2	12.26	0.03	17.72	1	330	0.000	
3	12.09	0.02	10.64	1	329	0.001	
4	11.94	0.01	9.33	1	328	0.002	

- a. Predictors: (Constant), Avoidant
- b. Predictors: (Constant), Avoidant, Active
- c. Predictors: (Constant), Avoidant, Active, Location
- d. Predictors: (Constant), Avoidant, Active, Location, Stigma
- e. Dependent Variable: PTSD

Table 7*Coefficient Statistics for four variables as predictors of PCL-5 Total PTSD Score**(n=333)*

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-10.75	2.08		-5.17	0.000
Avoidant	22.00	1.31	0.68	16.78	0.000
2 (Constant)	-16.97	2.51		-6.76	0.000
Avoidant	20.45	1.33	0.63	15.37	0.000
Active	4.25	1.01	0.17	4.21	0.000
3 (Constant)	-23.79	3.24		-7.34	0.000
Avoidant	19.41	1.35	0.60	14.38	0.000
Active	4.05	1.00	0.16	4.06	0.000
Location	5.07	1.55	0.13	3.26	0.001
4 (Constant)	-25.86	3.27		-7.91	0.000
Avoidant	18.50	1.37	0.57	13.54	0.000
Active	3.86	0.99	0.16	3.92	0.000
Location	4.73	1.54	0.12	3.08	0.002
Stigma	1.89	0.62	0.12	3.05	0.002

a. Dependent Variable: PTSD

Analysis of Work Trauma Subgroup

This study primarily explored relationships between risk and protective factors and overall PTSD scores found among the study sample. However, since the aim of the study is to investigate the contribution of mortuary work-related trauma to PTSD, I performed supplementary analysis on the subgroup of participants who reported on the PCL-5 that their worst trauma (and the trauma they presumably kept in mind while self-reporting PTSD symptoms) occurred while at work in the mortuary industry.

Unfortunately, due to an error in the skip logic on the survey, only 207 participants viewed and answered the question asking them to describe the worst event they have experienced. Although 295 (89%) of all 333 participants indicated that they have been exposed to trauma at work, 79 (38.2%) of 207 participants indicated that the worst event that came to mind occurred at work. I am calling this group of 79 participants the “work trauma subgroup.”

Correlation Matrix of Work Trauma Subgroup

Correlations were computed among PTSD scores and 11 predictor variables on data from 79 participants in the study who identified that their worst trauma event occurred during work as a mortuary worker (the Work Trauma Subgroup) to investigate more closely the relationship between PTSD scores and identified protective and risk factors specific to work trauma. Descriptive statistics for this subgroup appear in Table 8. A summary of the correlation analysis for PTSD scores and protective and risk factors appears in Table 9. The results suggest that with regard to PCL-5 Total PTSD Score, there are 4 correlations that are statistically significant with all 4 of those correlations significant at $p < .01$, two-tailed.

Two coping variables had significant correlations with PCL-5 Total PTSD Scores. Active Coping, $r(78) = .32, p < .001$ and Avoidant Coping, $r(78) = .57, p < .001$ both had positive correlations with PTSD scores. This suggests that the implementation of these two coping mechanisms is associated to higher PTSD scores.

Stigma ($r(78) = .30, p < .01$) and Identification ($r(78) = .32, p < .01$) also showed positive correlations with PTSD scores. Purpose was not significantly related to PTSD in this subset of participants.

Table 8

Descriptive Statistics for variables among participants who reported that their worst traumatic experience happened at work, except for gender and location (n=79)

	Mean	Std. Deviation
Total PTSD Score	19.66	16.56
Active coping *	2.00	0.82
Passive coping *	2.27	0.74
Avoidant coping *	1.44	0.49
Masking coping *	1.82	0.77
Years of experience	15.82	12.93
Body Handling **	27.32	21.38
Stigma ***	2.39	1.08
Identification ***	3.06	1.09
Purpose ***	4.16	0.82

* Coping scores on a scale 1-4, with 4 being maximum implementation of coping style

** Time spent handling or preparing bodies as a percentage out of a total 100% of time at work.

*** Single-item measures scores on a scale 1-5, with 5 being “extremely” in response to the survey question.

Table 9

Summary of the Intercorrelations of PCL-5 total PTSD scores and 11 predictor variables among participants who reported that their worst traumatic experience happened at work (n=79)

	1	2	3	4	5	6	7	8	9	10	11
PTSD											
Gend.	0.17										
	0.15										
Loca.	-0.10	0.01									
	0.36	0.95									
Active	.32**	.40**	-0.09								
	0.00	0.00	0.44								
Pass.	0.03	0.19	0.01	.54**							
	0.79	0.09	0.93	0.00							
Avoid.	.57**	0.04	0.03	.263*	0.05						
	0.00	0.75	0.78	0.02	0.64						
Mask.	0.22	0.02	-0.06	.23*	.23*	.37**					
	0.06	0.88	0.60	0.04	0.04	0.00					
YearX	-0.09	-.51**	0.19	-.29*	-0.06	-0.15	-0.18				
	0.41	0.00	0.09	0.01	0.60	0.18	0.12				
Body	0.17	-0.01	-0.10	-0.01	0.10	0.03	0.08	-.24*			
Hand.	0.14	0.96	0.39	0.95	0.38	0.81	0.50	0.04			
Stigma	.30**	0.10	-.23*	0.09	.24*	0.17	0.12	-0.15	0.09		
	0.01	0.36	0.04	0.41	0.03	0.13	0.28	0.20	0.44		
Identi.	.32**	.26*	-0.17	.27*	0.21	.36**	.29**	-0.17	0.19	.27*	
	0.00	0.02	0.12	0.02	0.06	0.00	0.01	0.13	0.09	0.01	
Purp.	-0.15	0.08	-0.09	0.19	.25*	-.32**	-0.13	0.07	0.09	-0.16	0.10
	0.20	0.48	0.42	0.09	0.03	0.00	0.26	0.53	0.44	0.16	0.37

** . Pearson Correlation is significant at the 0.01 level (2-tailed) - rounded to second decimal place for formatting

* . Pearson Correlation is significant at the 0.05 level (2-tailed) - rounded to second decimal place for formatting

Multiple Regression Analysis on Work Trauma Subgroup

Stepwise multiple regression analysis was used to test which of the 11 predictor variables best predicted participants' PTSD scores among the Work Trauma Subgroup. Tables 10 and 11 summarize the descriptive statistics and analysis results. The results of the stepwise linear regression indicated the two best predictors of Total PTSD Scores in the subgroup are avoidant coping and stigma. I found that avoidant coping ($\beta = .536, p < .001$) and stigma ($\beta = .209, p < .05$) were significant predictors of PTSD score among this subgroup and explained 35% of the variance with an adjusted $R^2 = .353, F(2,76)=22.24, p < .001$.

Table 10

Model summaries of variables as predictors of PCL-5 Total PTSD Score among participants who reported that their worst traumatic experience happened at work (n=79) where PTSD Score is dependent variable

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
1 (Constant)	6.405	15.168		0.422	0.674
Gender	5.714	3.740	0.172	1.528	0.131
Location	-4.576	2.257	-0.194	-2.027	0.047
Active	6.606	2.438	0.327	2.709	0.009
Passive	-5.847	2.500	-0.261	-2.338	0.023
Avoid	15.236	3.675	0.453	4.146	0.000
Masking	0.240	2.094	0.011	0.115	0.909
Years Exp	0.358	0.148	0.279	2.421	0.018
Stigma	2.859	1.487	0.186	1.923	0.059
Identification	0.181	1.656	0.012	0.109	0.913
Purpose	-1.858	2.145	-0.092	-0.866	0.389

Table 10 Continued

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.572a	0.327	0.318	13.68
2	.608b	0.369	0.353	13.33

a. Predictors: (Constant), Avoid

b. Predictors: (Constant), Avoid, Stigma

Table 11

Coefficient Statistics for variables as predictors of PCL-5 Total PTSD Score among participants who reported that their worst traumatic experience happened at work (n=79)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-7.953	4.769		-1.67	0.10
	Avoid	19.215	3.141	0.572	6.12	0.00
2	(Constant)	-13.875	5.338		-2.60	0.01
	Avoid	18.006	3.108	0.536	5.79	0.00
	Stigma	3.201	1.420	0.209	2.26	0.03

a. Dependent Variable: PTSDscore

Exploratory Research

Finally, I included two exploratory research questions in my survey with the aim of learning more about the climate surrounding help-seeking for mortuary workers who may be experiencing symptoms of stress. When asked “How comfortable would you be seeking mental health support (talking to a primary doctor, seeking therapy, seeking support groups) regarding stress symptoms as a result of your work?” 18.3% reported that they were not at all comfortable. When asked “How aware are you of mental health resources specific to the nature of your work?” 47.5% said they were not at all aware. A summary of this data appears in Table 12.

Table 12

Summary of data on attitudes surrounding help-seeking (n=333)

	Therapy Seeking		Resource Awareness	
	# participants	%	# participants	%
Not at all	61	18.32%	158	47.45%
A little bit	73	21.92%	75	22.52%
Moderately	80	24.02%	38	11.41%
Quite a bit	62	18.62%	34	10.21%
Extremely	57	17.12%	28	8.41%

Chapter IV

Discussion

The goal of this study was to examine the potential prevalence of Posttraumatic Stress Disorder symptoms among mortuary workers, and to investigate the role of several predictor variables in symptom severity. This study first calculated the number of participants who met provisional diagnosis criteria for PTSD. Next, the study compared PCL-5 Total PTSD Scores in the total sample to 11 identified predictor variables to summarize significant correlations. Then, I used multiple regression analysis to help describe the ability of the predictor variable to predict Total PTSD Scores. The study went on to explore similar analysis on the “Work Trauma Subgroup” - the group of participants who specifically identified their worst trauma as one that occurred in the workplace. Again, the study looked at correlations between predictors and PTSD Scores as well as ability of the predictors to predict variance in the PTSD scores among this subgroup. Lastly, the study posed two exploratory questions to gain insight to comfortability and awareness surrounding mental health resources among mortuary workers. The findings of this study provide preliminary support that mortuary workers are suffering from PTSD at a higher rate than the general population and uncover significant relationships between several variables and symptom severity (PCL-5 Total PTSD Scores).

The analysis of provisional PTSD caseness revealed that 28.5% of the sample met DSM-5 criteria for PTSD based on their responses to the self-report PCL-5 questionnaire. While I did not implement a control group in this study allowing for a direct comparison

to the general population, it is worth noting that researchers have found lower rates of prevalence in the general population, which range from 1% (Helzer et al., 1987) to 8.3% (Kilpatrick et al. 2013). This evidence supports my hypothesis, that PTSD is a considerable problem among mortuary workers.

The stepwise multiple regression analysis revealed the key predictors that best predicted Total PTSD Scores in the sample: location, stigma, active coping, and avoidant coping. While 10 out of the 11 predictor variables included in this study had significant zero-order correlations with PTSD, due to multicollinearity among some of these predictors, these four were identified as the key predictors of Total PTSD Scores.

When looking at the relationships between the predictor variables and PCL-5 Total PTSD scores, several significant correlations emerged in the matrix. While this study did not make predictions on the role of demographics in PTSD, I considered it important to include some demographic information on an exploratory basis. Gender had a significant relationship with Total PTSD Score, with women tending to produce higher average PTSD scores than men. The finding that women are more likely than men to develop PTSD has also been reported in the current literature. A 2002 study found that “females appear more likely to blame themselves for the trauma, to hold more negative views of themselves, and to view the world as more dangerous than do male trauma victims” (Tolin & Foa). Although further research would be required, it is feasible that gender differences in cognitive schema surrounding trauma processing could account for the difference in mean Total PTSD Scores among mortuary workers in this study.

Location also had a significant correlation with Total PTSD Scores and served as a key predictor of Total PTSD Scores. This study found that urban locations of practice

have a higher associated mean PTSD scores than non-urban locations. Presumably, mortuary workers practicing in an urban location may face increased frequency of exposure to trauma. A funeral home in an urban location may simply manage more bodies as a result of bigger local populations. Additionally, urban locations may have populations with increased violence, motor accidents, and other issues that face crowded cities.

Years of experience correlated inversely with Total PTSD scores, suggesting that the more years of experience in the field, the less likely you are to suffer from PTSD symptoms. This finding has several possible implications. First, it may indicate that those mortuary workers that manifest fewer PTSD symptoms remain in the industry longer. Second, as a mortuary worker gains experience they possibly develop and practice better coping mechanisms.

All of the coping mechanism factors identified in this study had positive correlations with Total PTSD Scores, and active and avoidant style coping positively predicted PTSD Scores in the multiple regression analysis. I originally predicted that active style coping mechanisms would correlate to lower Total PTSD Scores, however the relationship instead was positive, as it was with passive, avoidant, and masking coping styles. One possible explanation for this finding is that someone who is suffering from PTSD is more likely to seek out and employ coping mechanisms, whether they are considered adaptive or not, than is someone who is not similarly suffering. Further, we see that avoidant coping (which explains 46% of the variance in Total PTSD) is the single strongest predictor. This finding suggests that avoidant coping plays a major role in the development of PTSD among mortuary workers and calls for continued research.

With regard to stigma, identification, and purpose, the findings in the study supported my predictions. The multiple regression analysis identified stigma (feelings that one is perceived negatively because of their profession) as a positive predictor of Total PTSD Scores. Further, the zero-order correlation matrix revealed that stigma (positive), identification (positive), and purpose (negative) all correlated significantly with Total PTSD Scores. While the Thompson study (1991) provided evidence that mortuary workers may face unique social stigma, it was unknown how this factor may contribute to their mental health. My findings show that stigma positively correlates to Total PTSD Scores and suggest that increased feelings of social stigma predict increased Total PTSD Scores. It is feasible that feelings of negative social stigma could negatively affect self-worth, social support and similar factors that may help mitigate PTSD, though more research is necessary.

Increased feelings of personally identifying with the deceased (identification) also correlated significantly to increased Total PTSD Scores. Similarly to the findings of the Ursano et al. study (1999) in which disaster workers who reported increased identification with the dead produced increased incidence of PTSD, mortuary workers in this study who reported increased personal identification with the dead tended to exhibit higher Total PTSD Scores. This may suggest that mortuary workers who empathize with the deceased might be at greater risk of manifesting that empathy in the form of PTSD symptoms.

Lastly, the ability to find purpose or meaning in one's work correlated significantly to decreased Total PTSD Scores. While I am unable to include the quantitative data that participants provided in the open-ended portion of the study survey

in a formal analysis, they provided extremely enriching anecdotal notes. With regard to their personal ability to find meaning in the work, many participants cited their unique ability to perform a job that others cannot and a great sense of pride that they offer such an important service to their communities. Several participants used the term “calling” to describe their work, noting that what they do is much more than just a job. While the participant responses revealed many distressing of immense pride and greater purpose in the work. This finding suggests that the more a mortuary worker is able to find compassion satisfaction in their work, the more they are protected against PTSD symptoms.

All but one of the eleven predictor variables included in this study had significant correlations with Total PTSD Scores. I originally predicted that increased time spent with body handling or preparation duties would be related to increased rates of PTSD symptoms (Total PTSD Scores), however no significant relationship was uncovered. One explanation may be that mortuary workers engage in a wide range of duties and that no one duty significantly predicts increased Total PTSD.

With regard to the “Work Trauma Subgroup”, this study revealed somewhat different findings from those within the total sample in that fewer significant relationships emerged. Only four of the identified predictor variables had significant correlations with Total PTSD Scores. Active coping, avoidant coping, stigma, and identification all positively correlated with Total PTSD Scores. The stepwise multiple regression revealed that avoidant coping and stigma served as the best predictors of Total PTSD Scores. This supplementary analysis may also emphasize the importance of the

role of avoidant coping mechanisms and social stigma in PTSD development in mortuary workers, as these two variables emerge repeatedly and significantly in the analysis.

While 89% of all participants reported trauma exposure on the job, the revealing of fewer significant correlations in the subgroup might suggest that there are important differences to be explored between mortuary workers who have experienced their worst trauma at work and those who have experienced their worst trauma in a personal arena.

General Discussion

With so little research on PTSD among civilian mortuary workers, this study gives preliminary support to the hypothesis that mortuary workers are a population suffering from PTSD at a significant rate. The research also suggests that there are important risk and protective factors at play, which warrant further investigation with a more narrowed lens to help build a more robust understanding of the role that each factor plays in the development or mitigation of PTSD. The research also shows that many mortuary workers may not be sufficiently comfortable seeking mental health support, and may not be aware of such resources available to them. In all, the study identifies several potential problems related to demographics, coping, and other cognitive experiences leading to suffering by mortuary workers that should be resolved.

General Discussion

Though this study makes some steps towards unveiling a mental health problem in current society and highlighting key risk and resilience factors, it is important to note the limitations of the findings. Firstly, this study is limited to a convenience sample,

therefore findings can not be generalized. Additionally, since the purpose of the study, as it was described to potential participants, was to understand risk and resilience to stress, it is possible that participants who feel symptoms of stress (or have a stronger opinion in general) may be more inclined to lend their voice, thus skewing the sample towards higher symptom severity.

On the other hand, while the PCL-5 provides psychometric validity, (Blevins et al., 2015) the sensitive nature of the self-report survey may make participation challenging for some subjects. If subjects are reached by way of their employer or feel their employer might somehow gain access to their responses, they may feel inclined to minimize negative feelings or experiences for fear of professional consequences, even though surveys are confidential and individual responses will not be shared with employers. Additionally, the PCL-5 does not serve to provide conclusive PTSD diagnosis. Clinical interviews would be required for diagnosis and PTSD caseness in this study can only be provisional.

It is also important that the findings of this study only suggest potential correlations between predictors and Total PTSD Scores and they cannot determine causation. Longitudinal studies of predictor variables and their relationships with PTSD symptom severity would be beneficial in investigating causal effects more effectively.

Lastly, the “Work Trauma Subgroup” provided a small sample size, which makes the findings from this portion of analysis on this subgroup less statistically reliable.

Despite these limitations, this study uncovers a previously unexplored mental health concern as well as important related trends in the data. This study intends to

stimulate discussion, continued research, and consequently problem-solving surrounding symptoms of Posttraumatic Stress Disorder among mortuary workers. It is my hope that future studies can explore in greater depth, the important risk and protective factors that this study has revealed.

References

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders*. Arlington, VA.
- Blevins, C. A., Weathers, F. W., Davis, M. T., Witte, T. K., & Domino, J. L. (2015). The Posttraumatic Stress Disorder Checklist for *DSM-5* (PCL-5): Development and Initial Psychometric Evaluation. *Journal of Traumatic Stress, 28*(6), 489–498. <https://doi.org/10.1002/jts.22059>
- Brady, M. R., & Matthew, R. (2008). Variables associated with secondary trauma in police officers and funeral directors.
- Bride, B. E. (2007). Prevalence of Secondary Traumatic Stress among Social Workers. *Social Work, 52*(1), 63–70. <https://doi.org/10.1093/sw/52.1.63>
- Bride, B. E., Robinson, M. M., Yegidis, B., & Figley, C. R. (2004). Development and Validation of the Secondary Traumatic Stress Scale. *Research on Social Work Practice, 14*. <https://doi.org/10.1177/1049731503254106>
- Briere, J., Agee, E., & Dietrich, A. (2016). Cumulative trauma and current posttraumatic stress disorder status in general population and inmate samples. *Psychological Trauma: Theory, Research, Practice, and Policy, 8*(4), 439–446. <https://doi.org/10.1037/tra0000107>
- Britt, T. W. (2000). The stigma of psychological problems in a work environment: Evidence from the screening of service members returning from Bosnia. *Journal of*

Applied Social Psychology, 30, 1599–1618.

- Carlier, I. V. E., Lamberts, R. D., & Gersons, B. P. R. (1997). Risk Factors for Posttraumatic Stress Symptomatology in Police Officers: A Prospective Analysis. *The Journal of Nervous & Mental Disease*, 185(8), 498–506.
<https://doi.org/10.1097/00005053-199708000-00004>
- Carver, C. S. (1997). You want to measure coping but your protocol' too long: Consider the brief cope. *International Journal of Behavioral Medicine*, 4(1), 92–100.
https://doi.org/10.1207/s15327558ijbm0401_6
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56(2), 267–283. <https://doi.org/10.1037/0022-3514.56.2.267>
- Cicognani, E., Pietrantonio, L., Palestini, L., & Prati, G. (2009). Emergency Workers' Quality of Life: The Protective Role of Sense of Community, Efficacy Beliefs and Coping Strategies. *Social Indicators Research*, 94(3), 449–463.
<https://doi.org/10.1007/s11205-009-9441-x>
- Cieslak, R., Shoji, K., Douglas, A., Melville, E., Luszczynska, A., & Benight, C. C. (2014). A meta-analysis of the relationship between job burnout and secondary traumatic stress among workers with indirect exposure to trauma. *Psychological Services*, 11(1), 75–86. <https://doi.org/10.1037/a0033798>
- Figley, C. R. (1995). Compassion fatigue as secondary traumatic stress disorder: An overview.

Figley, C. R., & Stamm, B. H. (2002). *Treating compassion fatigue*. Brunner-Routledge., contains, Stamm, B. H. (2002). Measuring compassion satisfaction as well as fatigue: Developmental history of the compassion fatigue and satisfaction test. In C. R. Figley (Ed.), *Treating compassion fatigue* (pp. 107-119). New York: Brunner-Routledge

Frans, O., Rimmo, P.-A., Aberg, L., & Fredrikson, M. (2005). Trauma exposure and post-traumatic stress disorder in the general population. *Acta Psychiatrica Scandinavica*, *111*(4), 291–290. <https://doi.org/10.1111/j.1600-0447.2004.00463.x>

Gersons, B. P. R. (1989). Patterns of PTSD among police officers following shooting incidents: A two-dimensional model and treatment implications. *Journal of Traumatic Stress*, *2*(3), 247–257. <https://doi.org/10.1002/jts.2490020302>

Helzer, J. E., Robins, L. N., & McEvoy, L. (1987). Post-Traumatic Stress Disorder in the General Population. *New England Journal of Medicine*, *317*(26), 1630–1634. <https://doi.org/10.1056/NEJM198712243172604>

Hesse, A. R. (2002). Secondary Trauma: How Working with Trauma Survivors Affects Therapists. *Clinical Social Work Journal*, *30*(3), 293–309. <https://doi.org/10.1023/A:1016049632545>

Irish, L. A., Fischer, B., Fallon, W., Spoonster, E., Sledjeski, E. M., & Delahanty, D. L. (2011). Gender differences in PTSD symptoms: An exploration of peritraumatic mechanisms. *Journal of Anxiety Disorders*, *25*(2), 209–216. <https://doi.org/10.1016/J.JANXDIS.2010.09.004>

Kilpatrick, D. G., Resnick, H. S., Milanak, M. E., Miller, M. W., Keyes, K. M., &

- Friedman, M. J. (2013). National estimates of exposure to traumatic events and PTSD prevalence using DSM-IV and DSM-5 criteria. *Journal of traumatic stress*, 26(5), 537-547.
- Lindemann, E. (1944). Symptomology and Management of Acute Grief. *American Journal of Psychiatry*, 101(2), 141–148. <https://doi.org/10.1176/ajp.101.2.141>
- Lovibond, S.H. & Lovibond, P.F. (1995). Manual for the Depression Anxiety & Stress Scales. (2nd Ed.)Sydney: Psychology Foundation.
- McCarroll, J. E., Ursano, R. J., Fullerton, C. S., Liu, X., & Lundy, A. (2001). Effects of exposure to death in a war mortuary on posttraumatic stress disorder symptoms of intrusion and avoidance. *The Journal of Nervous and Mental Disease*.
- Paunovic, N., & Öst, L. G. (2001). Cognitive-behavior therapy vs exposure therapy in the treatment of PTSD in refugees. *Behaviour Research and Therapy*, 39(10), 1183–1197. [https://doi.org/10.1016/S0005-7967\(00\)00093-0](https://doi.org/10.1016/S0005-7967(00)00093-0)
- Richardson, L. K., Frueh, B. C., & Acierno, R. (2010). Prevalence estimates of combat-related post-traumatic stress disorder: critical review. *The Australian and New Zealand Journal of Psychiatry*, 44(1), 4–19. <https://doi.org/10.3109/00048670903393597>
- Roberts, A. L., Gilman, S. E., Breslau, J., Breslau, N., & Koenen, K. C. (2017). Race/ethnic differences in exposure to traumatic events, development of post-traumatic stress disorder, and treatment-seeking for post-traumatic stress disorder in the United States. *Psychological Medicine*, 41, 71–83. <https://doi.org/10.1017/S0033291710000401>

- Robinson, H., Sigman, M., & Wilson, J. (1997). Duty-related stressors and PTSD symptoms in suburban police officers. *PSYCHOLOGICAL REPORTS*, *81*(3), 835–845.
- Shuchter, S. R., & Zisook, S. (1985). Psychological Reactions to the PSA Crash. *The International Journal of Psychiatry in Medicine*, *14*(4), 293–301.
<https://doi.org/10.2190/N21W-DY7Q-J47Y-AN8R>
- Sprang, G., Clark, J. J., & Whitt-Woosley, A. (2007). Compassion Fatigue, Compassion Satisfaction, and Burnout: Factor's Impacting a Professional's Quality of Life.
<https://doi.org/10.1080/15325020701238093>
- Tarrier, N., & Gregg, L. (2004). Suicide risk in civilian PTSD patients. *Social psychiatry and psychiatric epidemiology*, *39*(8), 655-661.
- Thompson, W. E. (1991). Handling the stigma of handling the dead: Morticians and funeral directors. *Deviant Behavior*, *12*(4), 403–429.
- Tolin, D. F., & Foa, E. B. (2002). Gender and PTSD: A cognitive model. In R. Kimerling, P. Ouimette, & J. Wolfe (Eds.), *Gender and PTSD* (pp. 76-97). New York, NY, US: The Guilford Press.
- Ursano, R. J., Fullerton, C. S., Kao, T. C., & Bhartiya, V. R. (1995). Longitudinal assessment of posttraumatic stress disorder and depression after exposure to traumatic death. *The Journal of Nervous and Mental Disease*.
<https://doi.org/10.1097/00005053-199501000-00007>

- Ursano, R. J., Fullerton, C. S., Vance, K., & Kao, T. C. (1999). Posttraumatic stress disorder and identification in disaster workers. *American Journal of Psychiatry*, *156*(3), 353–359. <https://doi.org/10.1176/ajp.156.3.353>
- Van Etten, M. L., & Taylor, S. (1998). Comparative Efficacy of Treatments for Post-traumatic Stress Disorder: A Meta-Analysis. *Clinical Psychology and Psychotherapy*, *5*, 126–144.
- Weathers, F.W., Litz, B.T., Keane, T.M., Palmieri, P.A., Marx, B.P., & Schnurr, P. P. (2013). The PTSD Checklist for DSM-5 (PCL-5). Scale available from the National Center for PTSD at www.ptsd.va.gov.
- Zimet GD, Dahlem NW, Zimet SG, F. G. (1988). Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, *52*, 30–41. Retrieved from <http://www.yorku.ca/rokada/psyctest/socsupp.pdf>